

Amendments to the Drawings:

The attached sheets of drawings includes changes to Fig. 3. In Figure 3, the reference number 30 and its associated lead line have been moved.

Attachment: Replacement Sheet (Appendix A)

REMARKS

I. INTRODUCTION

Applicants have cancelled claims 16 and 18-19, amended claims 2 and 17.

Accordingly, claims 1-15 and 17 are presently pending in this application. Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the following arguments.

II. AMENDMENTS TO THE CLAIMS

Applicants have amended claim 2 to correct an informality in the claim identified by the Examiner. Applicants have amended claim 17 to place claim 17 in independent form. Applicants submit that none of these amendments adds any new matter.

III. AMENDMENTS TO THE DRAWINGS

Applicants have amended Figure 3 to move the reference number 30 and its associated lead line for clarification. Applicants submit that the drawing amendment does not add any new matter.

IV. OBJECTIONS TO THE DRAWINGS

The drawings stand objected to under 37 C.F.R. 1.83 as failing to show every feature of the invention specified in the claims. Applicants have amended Figure 3 to move the reference number 30 and its associated lead line to clarify those flats of the nut forming the “nut retaining feature” in the illustrated embodiment upon assembly. As set forth in the claims and specification; the nut contains “at least one” nut retaining feature. In the embodiment of Figures 1-3, these features are flats formed on the outer diameter of the nut and may comprise one or all of the flats. In the illustrated embodiment, four of six flats form “nut retaining features” Original Figure 3, however, inadvertently included

the reference number 30 directed to one of the flats not forming a “nut retaining feature” in the illustrated embodiment. Applicants submit that the amendment overcomes the objection regarding Figure 3 identified by the Examiner and request that the objection be withdrawn.

The Examiner also noted that “Figure 4 does not show ‘each nut retaining feature comprises an outer groove; and each nut tang is received in the outer groove’ as stated in claim 6.” Applicants respectfully disagree. Figure shows an exploded view with each outer groove 50, or nut retaining feature, aligned with a corresponding nut tang 48. Furthermore, Figures 5-6 show assemblies in which each nut tang 48 is illustrated as received in the corresponding outer groove 50. Accordingly, Applicants submit that the drawings to show the feature of the invention specified in the claims. Applicants therefore request that the objection be withdrawn.

V. OBJECTION TO THE CLAIMS

Claim 2 stands objected to due to informalities. Applicants have amended claim 2 in accordance with the Examiner’s suggestion. Accordingly, Applicants submit that the objection has been overcome and request that the objection be withdrawn.

VI. REJECTIONS OF CLAIMS 16-19 UNDER 35 U.S.C. § 102(B)

Claim 16 and 19 stand rejected under 35 U.S.C. § 102(b) as anticipated by Reid (U.S. Patent No. 738,716). Claims 16-17 stand rejected under 35 U.S.C. § 102(b) as anticipated by Cronin et al. (U.S. Patent No. 5,618,143). Claim 16 stands rejected under 35 U.S.C. § 102(b) as anticipated by Loe (U.S. Patent No. 1,543,282). Claims 16 and 19 stand rejected under 35 U.S.C. § 102(b) as anticipated by Hart (U.S. Patent No. 706,409).

Claims 16 and 19 stand rejected under 35 U.S.C. § 102(b) as anticipated by Cronin II et al. (U.S. Patent No. 5,772,373). Claims 16 and 18 stand rejected under 35 U.S.C. § 102(b) as anticipated by Givoanni (U.S. Patent No. 1,731,337). Finally, claim 16 stands rejected under 35 U.S.C. § 102(b) as anticipated by “Applicant’s own admission (instant specification, paragraph [0002], lines 1-4). Applicants have cancelled claims 16 and 18-19. Applicants submit that the single rejection of remaining claim 17 under 35 U.S.C. § 102(b) is improper because Cronin II et al. do not disclose or suggest all of the limitations recited in claim 17. In re Paulsen, 30 F.3d 1475, 1478-79, 31 U.S.P.Q.2d 1671 (Fed. Cir. 1994); Verdegaal Bros. v. Union Oil Co. of California, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1997) (“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”).

Independent claim 17 recites a “lock washer” including “at least one nut tang....the at least one nut tang including a plurality of nut tangs extending from the inner diameter of the lock washer, and an inner diameter suitable for mounting around an adjacent nut shoulder.” Applicants respectfully submit that Cronin II et al. do not disclose a lock washer meeting the above-recited limitations.

Cronin II et al. discloses an “anti-rotation spring” 20 having radially outwardly extending tabs 22 configured to fit in slots 16 in nut 10 and notches 32 in a back up plate 30. Col. 2, lines 50-55; col. 3, lines 3-5; Figure 2 The spring 20 also has a radially inwardly extending leg 29 “arranged to engage a keyway, flat or the like (slot) in a spindle or the like.” The leg 29 has an axially extending portion, but notably states that:

The axially extending portion is primarily to assist assembly (e.g., avoid mounting the spring backwards). It can be eliminated but leaving the radially projected portion for engaging the keyway.

Col. 2, line 65 to col. 3, line 2. Cronin II, therefore discloses, at most, that leg 29 engages a spindle. There is simply no disclosure that the leg 29 engages the nut 10 such that leg 29 could be considered a “nut tang” within the meaning of the claim. Tabs 22 do engage the nut 10, but are not “extending from the inner diameter of the lock washer.” Rather, tabs 22 extend from the outer diameter. Applicants further note that there is simply no disclosure in Cronin II of “an inner diameter suitable for mounting around an adjacent nut shoulder” as recited in claim 17.

Because Cronin II does not disclose or suggest a lock washer meeting all of the limitations recited in claim 17, Applicants submit that the rejection of claim 17 under 35 U.S.C. § 102(b) is improper. Accordingly, Applicants request that the rejection be withdrawn.

VII. REJECTIONS OF CLAIMS 1-15 UNDER 35 U.S.C. § 103(A)

Claims 1-3, 9-11, and 15 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball (U.S. Patent No. 130,689) in view of Chapman (U.S. Patent No. 641,191) and further in view of Reid (U.S. Patent No. 739,716). Claims 1, 9-11 and 15 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Wing et al. (U.S. Patent No 3,851,690) and further in view of Reid. Claim 2 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Wing et al. and further in view of Reid in even further view of either Carns (U.S. Patent No. 1,685,120) or Giovannini (U.S. Patent No. 1,731,337). Claim 3 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Wing et al. and further in view of Reid and in even further view of Hein (U.S. Patent No. 3,447,342). Claims 4-5 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Wing et al. and further

in view of Reid and in even further view of Cronin II et al. (U.S. Patent No. 5,772,373). Claim 6 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Wing et al. and further in view of Reid and in even further view of Cronin II et al. and in even further view of Ullman (U.S. Patent No. 906,475). Claims 7-8 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Wing et al. and further in view of Reid and in even further view of Cronin II et al. and in even further view of Olson (U.S. Patent No. 2,128,429). Claim 12 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Champion or Wing et al. and further in view of Reid and in even further view of Harker (U.S. Patent No. 433,730). Claim 13 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Champion or Wing et al. and further in view of Reid and in even further view of Karis (U.S. Patent No. 5,022,875). Claim 14 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Champion or Wing et al. and further in view of Reid and in even further view of Olson. Finally, claim 15 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Ball in view of Champion and further in view of Reid and in even further view of Herold (U.S. Patent No. 2,155,827). Applicants respectfully submit that the rejections of claims 1-15 under 35 U.S.C. § 103(a) are improper because there is no suggestion or motivation to combine Champion or Wing et al. with Ball.

“Patent examiners carry the responsibility of making sure that the standard of patentability enunciated by the Supreme Court and by the Congress is applied in each and every case.” MPEP § 2141 (emphasis in original).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference

teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations.

MPEP § 2143. Applicants submit that there is no suggestion or motivation to combine the teachings of Champion or Wing et al. with the teachings of Ball.

Independent claim 1 recites a “combination lock washer and spindle bearing assembly” including a “trust washer”, “nut,” and “lock washer.” The nut includes “a nut body...and an inner circumferential shoulder extending from the nut body in direct contact with the thrust washer forming a pocket between the thrust washer and nut body” in which the lock washer is retained. Independent claim 15 recites a “combination thrust washer, lock washer and nut assembly” having the same limitations. The Examiner acknowledges that Ball does not disclose or suggest a combination meeting the above-recited limitations. The Examiner argues, however, that Champion and Wing et al. disclose or suggest the limitation and that it would have been obvious to modify Ball to include such a feature. Applicants disagree.

Champion discloses a sleeve 5 for use around a nut or bolt head to prevent loosening of the nut or bolt using ordinary tools such as wrenches. ‘191 Patent, lines 15-25. The nut 7 is “shouldered” to retain a flanged end of the sleeve 5 between the nut and the part to which the nut is applied. ‘191 Patent, lines 55-69. Notably, this arrangement is designed to allow the sleeve 5 to be “free to revolve at all times...” to prevent unscrewing of the nut 7 using conventional tools. *Id.* Accordingly, even if Ball “does not teach away from a lock washer being rotateably held in a pocket” as asserted by the Examiner, Champion certainly does. Moreover, the only stated reason for the shoulder portion of nut 7 in Champion is to retain the sleeve 5 and prevent relative axial movement while allowing rotation of the sleeve. *Id.* Ball already discloses means for preventing

axial movement of the washer *m* and preventing rotation of the nut *e*. Fig. 1. In particular, the washer *m* in Ball is simply sandwiched between the collar *c* and the nut *e* to prevent axial movement and Ball discloses a nut *e* with flats and corresponding washer projections *n'*, *n'* that are bent around the flats. See '689 Patent, Figure 1 and second column ("The projections *n n* of the flexible washer are bent around the collar *c*, and the projections *n' n'* around the nut *e*, thus fastening them together and preventing the turning of the nut."). Accordingly, one of ordinary skill in the art would not have had any motivation to modify Ball to include a shoulder for the suggested purpose in Champion (i.e., to retain the sleeve axially while allowing it to rotate).

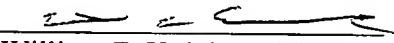
Wing et al. discloses a means for preventing rotation of the nut on the end of a spindle assembly. Col. 1, lines 4-7. An annular ring member or indicating ring 29 is disposed on mating extensions of a washer 15 and a nut 45. The ring 29 includes serrations on radially inner diameter configured to engage serrations on the radially outer diameters of the washer and nut extensions to prevent rotation, and therefore loosening, of the nut. Figure 2; col. 2, lines 30-32; col. 4, lines 58-67. Again, Ball already discloses means for preventing rotation of the nut. In particular, Ball discloses a nut *e* with flats and corresponding washer projections *n'*, *n'* that are bent around the flats. See '689 Patent, second column ("The projections *n n* of the flexible washer are bent around the collar *c*, and the projections *n' n'* around the nut *e*, thus fastening them together and preventing the turning of the nut."). Accordingly, one of ordinary skill in the art would not have had any motivation to modify Ball to include a shoulder for the suggested purpose in Wing et al. (i.e., to provide an anti-rotation feature).

Because there is no suggestion or motivation for combining the teachings of Ball with either Champion or Wing et al., Applicants submit that the rejections of claims 1-15 under 35 U.S.C. § 103(a) is improper. Accordingly, Applicants request that the rejections be withdrawn.

VIII. CONCLUSION

For the above cited reasons, all of the claims presently pending in this application are believed to be allowable. If the Examiner has any further questions or concerns, the Examiner is invited to contact the Applicant's undersigned attorney.

Respectfully submitted,


William F. Kolakowski III
Registration No. 41908
Customer No. 26,127
DYKEMA GOSSETT PLLC
39577 Woodward Ave., Ste. 300
Bloomfield Hills, MI 48304
(248) 203-0822
Attorney for Applicant

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